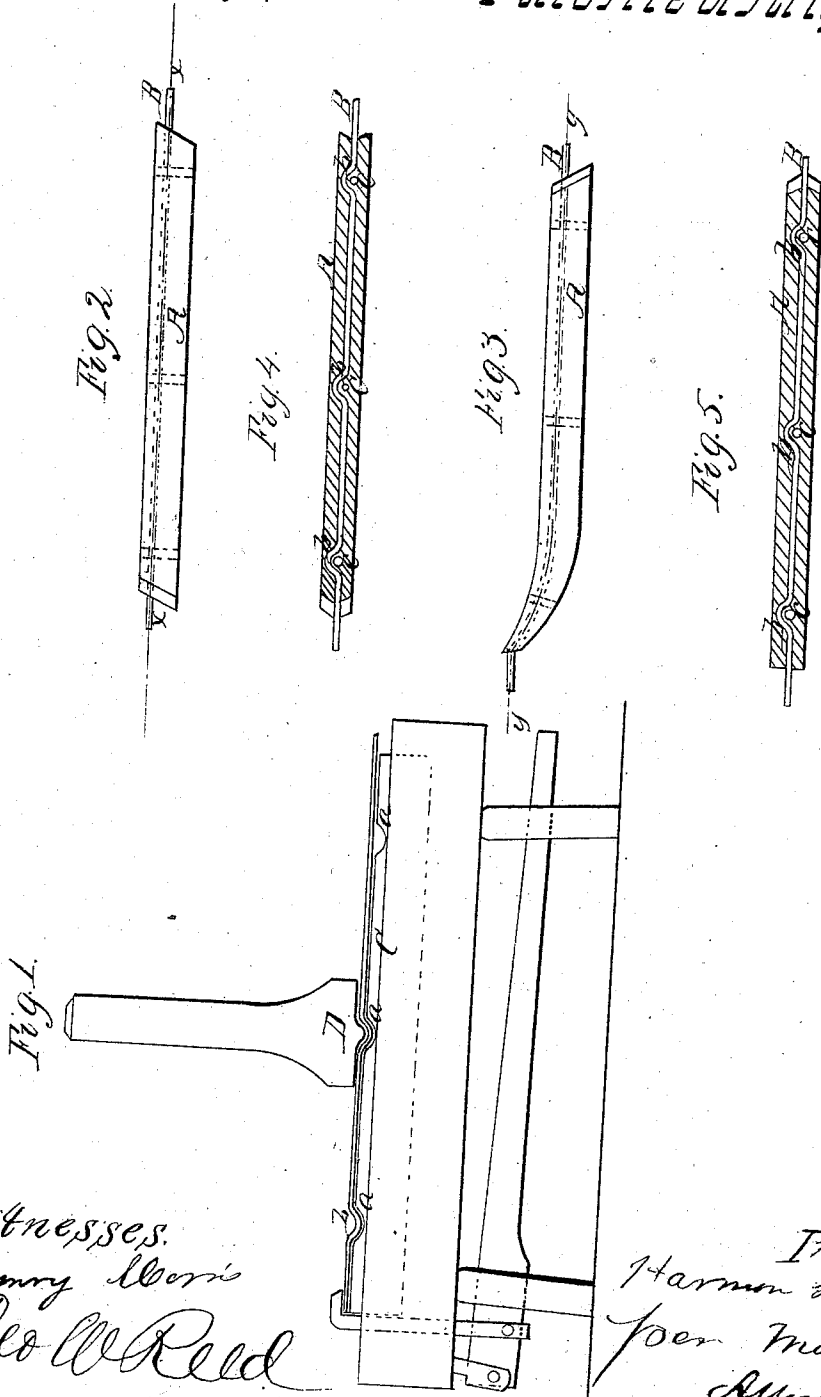


H. Lovelace,

Sleigh Runner.

No 43,418.

Patented July 5, 1864.



Witnesses:
 Henry Morris
 Geo W Reed

Inventor:
 Harmon Lovelace
 per Mum Ho
 Attorney

UNITED STATES PATENT OFFICE.

HARMON LOVELACE, OF CHATFIELD, MINNESOTA.

IMPROVEMENT IN THE MANUFACTURE OF SLEIGH-RUNNERS.

Specification forming part of Letters Patent No. 43,418, dated July 5, 1864.

To all whom it may concern:

Be it known that I, HARMON LOVELACE, of Chatfield, in the county of Fillmore and State of Minnesota, have invented a new and useful Improvement in Metal Shoes for the Runners of Sleighs and Sleds; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of a device I employ for bending the rods which pertain to my invention; Figs. 2 and 3, side views of portions of a shoe constructed according to my invention; Figs. 4 and 5, sections of Figs. 2 and 3, taken, respectively, in the lines *x x y y*.

Similar letters of reference indicate the same parts.

The object of this invention is to obviate the difficulty of portions of the shoe becoming detached from the runner in case of the breaking of the former, a contingency of frequent occurrence and which occasions considerable annoyance and trouble.

My invention consists in casting the shoe with a longitudinal rod, one or more, within it, as hereinafter set forth, whereby the desired end is attained.

The shoe may be cast in one or more pieces, A, and with a wrought-iron rod, B, within it. One or more rods, B, may be employed, and

when one rod is used I bend it at suitable distances apart, so that it will not interfere with the bolts which secure the shoe to the runner. The rod may be bent by clamping the same on a metal bed, C, having recesses *a* made in it, as shown in Fig. 1, and then bending the rod by means of a swage, D. These bends (designated by *b*) extend around the bolt-holes *c* in the shoes, and the rod B is adjusted in the mold and the shoe cast around it, the rod being so adjusted in the mold that when the shoe is cast the rod will be near the upper surface of the shoe, as shown in Figs. 2 and 3. If two rods, B, are employed, they will not require to be bent. They may be perfectly straight and placed side by side, the bolt-holes *c* being between them.

It will be seen from the above description that in case of the breaking of a shoe the pieces will not become detached, as the rod or rods B will hold the pieces together.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A shoe for sled and sleigh runners, constructed by casting metal around wrought-metal rods, in the manner substantially as and for the purpose herein set forth.

HARMON LOVELACE.

Witnesses:

ZENAS RANK,
GEO. A. HENRY.